

ETHYL CORPORATION

RESEARCH AND DEVELOPMENT DEPARTMENT

February 19, 1985

CWE	HCW	W	JBM
LAW DEPARTMENT			
TO: P. O. BOX 34			
FEB 25 1985			
LA 70821			
FILE			

The Honorable Henry A. Waxman
Chairman, Subcommittee on Health
and the Environment
Congress of the United States
2418 Rayburn House Office Building
Washington, D. C. 20515

Dear Congressman Waxman:

This letter is the Ethyl Corporation response to your letter dated January 31, 1985, addressed to the Chairman of the Board of Ethyl Corporation. Your letter was received by Ethyl Corporation on February 6, 1985. Your letter requested information under four items; our reply is keyed to those four items, and although not specifically requested, covers all U.S. chemical plants operated by subsidiaries of Ethyl Corporation as well as those operated by Ethyl Corporation.

1. Ethyl Corporation initiated an industrial hygiene program nearly fifty years ago to monitor potential health effects in the tetraethyllead manufacturing process. This concern for employee exposure to chemicals has carried through Ethyl's diversification into other industrial chemical manufacturing. Today Ethyl has a Corporate Toxicology and Industrial Hygiene Department whose responsibility is to recognize, evaluate, and recommend control of, employee exposure to chemical and physical stresses in the workplace. The corporate industrial hygiene program covers all of Ethyl's chemical manufacturing facilities. Periodic industrial hygiene surveys are conducted at each facility.

Ethyl does not have a chemical classification of health effects similar to that mentioned in your letter. However, Ethyl Corporation conducts regular industrial hygiene surveys of all of its and its subsidiaries' chemical plants. We evaluate the potential for exposure, either by inhalation or by skin contact. The level of toxicity of a chemical is of major importance in determining monitoring frequency. However, the continuing monitoring frequency is also partially determined by the historical levels found. For some chemicals, when the toxicity level and exposure potential warrant it, a continuous on-line monitoring system is used.

Ethyl chemical workers are provided an annual core physical examination consisting of a comprehensive general history, physical examination by a physician, urinalysis, chest x-ray

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if clinically indicated or mandated by regulation or exposure, pulmonary function test, stool examination for occult blood at age 40 and over, electrocardiogram at age 40 and over or if clinically indicated, complete blood count, audiogram, vision test, and blood chemistries consisting of 25 analyses and thyroid function. This core examination is supplemented by special tests where indicated such as blood lead, cholinesterase level, thyroid stimulating hormone, immune antibodies, etc., at appropriate intervals.

The main purpose of these periodic physical examinations is to insure that current exposures of our workers are safe and do not entail unacceptable health risks, and to detect potential excessive exposure before occurrence of detectable adverse health effects. Other objectives are to alert the employee of any significant health deficiencies and to recommend remedial action. Further, we comply with all applicable laws, government regulations and Ethyl requirements concerning examination of chemical workers.

2. The Ethyl Corporation Corporate Environmental Affairs Group has summarized the actual and potential emissions of several chemicals emitted to the atmosphere from the seven U.S. chemical plants operated by Ethyl Corporation or by a wholly owned subsidiary. The chemicals were selected by the following criteria.
 - a. Hazardous air pollutants regulated under the NESHAP program.
 - b. List of 37 suspected hazardous air pollutants under assessment.
 - c. Chemicals listed in paragraph three on page one of your letter of January 31, 1985.
 - d. Chemicals which Ethyl Corporation personnel believe have health effects similar to the materials listed in paragraph three on page one of your letter of January 31, 1985.

The actual releases are the permitted releases that generally occur on a continuing basis. The potential releases listed are based on a catastrophic event in which

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all the material on hand in a single container would be released. This is a most unlikely scenario which assumes catastrophic failure of the container and further assumes that none of the planned emergency controls other than secondary containment would be effective in controlling the release. Those materials listed with an actual emission rate but without a "Potential Maximum Emission" are those with either a very small quantity on-site at any given time and/or low volatility such that a hazardous concentration of the material would not occur off-plant. Those listed with a potential maximum emission but not an actual emission are those which are handled in a way that does not result in routine emissions.

Compound	1983-1985 Actual Emission		Potential Maximum Emission
	Tons/year	Lb/Hr	Tons/Occurrence
<u>Ethyl Corporation - Baton Rouge, Louisiana Plant</u>			
Tetraethyl Lead	156	40	-
Tetramethyl Lead	4	1	-
Inorganic Lead	22	5	-
Ethylene Dichloride	111	28	-
Ethylene Dibromide	< 1	< 1	-
Hydrogen Chloride	< 1	< 1	-
Chlorine	< 1	< 1	55
<u>Ethyl Corporation - Pasadena, Texas Plant</u>			
Tetraethyl Lead	< 1	< 1	-
Tetramethyl Lead	< 1	< 1	-
Ethylene Dichloride	< 1	< 1	-
Ethylene Dibromide	< 1	< 1	-
Aniline	13	3	-
Hydrogen Chloride	99	25	2
<u>Ethyl Corporation - Magnolia, Arkansas Plant</u>			
Bromine Chloride	-	-	85
Sulfur Dioxide	2260	565	-
Hydrogen Sulfide	-	-	2
Chlorine	115	29	90
Bromine	137	34	66
Methyl Bromide	15	4	110
Vinyl Bromide	< 1	< 1	20
Ethylene Dibromide	4	1	9
Dimethyl Amine	-	-	80
Hydrogen Bromide	-	-	8

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<u>Compound</u>	<u>1983-1985 Actual Emission</u>		<u>Potential Maximum Emission</u>
	<u>Tons/year</u>	<u>Lb/Hr</u>	<u>Tons/Occurrence</u>
<u>Ethyl Corporation - Orangeburg, South Carolina Plant</u>			
Acetyl Chloride	6	2	80
Methylene Chloride	288	72	150
Aniline	5	1	-
Phosphorus Trichloride	-	-	200
Hydrogen Cyanide	-	-	1
Hydrogen Chloride	-	-	72
Toluene Diamine	24	6	-
Formaldehyde	-	-	25
Dimethyl Amine	-	-	20
Toluene	99	25	-
Xylene	5	1	-
<u>Hardwicke Chemical Company - Elgin, South Carolina Plant</u>			
Formaldehyde	4	1	-
Benzene	3	1	-
Hydrogen Chloride	1	< 1	-
Methallyl Chloride	< 1	< 1	-
Hydrogen Bromide	3	< 1	-
Bromine	-	-	12
Phosphorus Trichloride	-	-	23
Diethylamine	9	2	-
Chlorobenzene	3	< 1	-
<u>Ethyl Corporation - Sayreville, New Jersey Plant</u>			
Ethylene Dichloride	87	22	-
Bromine	< 1	< 1	7
Chlorine	< 1	< 1	1
Sulfur Trioxide	< 2	< 1	22
Perchloroethylene	29	7	-
Toluene	20	5	-
Ethylene Diamine	< 1	< 1	-
<u>Ethyl Petroleum Additives, Inc. - Sauget, Illinois Plant</u>			
Benzene	37	9	-
Maleic Anhydride	6	2	-
Xylene	26	6	-
Sulfur Dioxide	1007	250	50
Hydrogen Sulfide	-	-	14
Hydrogen Chloride	-	-	113
Chlorine	-	-	55
Sulfur Trioxide	-	-	54

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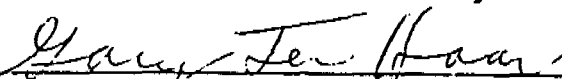
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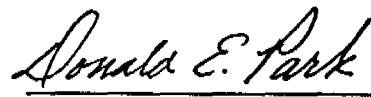
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3. Ethyl Corporation conducts what amounts to a continuous survey to determine that the concentration of chemicals in the workplace is below workplace standards, to determine that pollution control equipment is operating satisfactorily, to determine that process equipment and emergency equipment are in sound condition and that personnel are trained in emergency procedures. Portable personnel monitoring equipment and, in many cases, fixed continuous automatic analytical instruments are used to measure the concentration of materials in the workplace. Portable monitoring equipment and, where appropriate, fixed continuous automatic analytical instruments are used to measure the concentration of materials in vents to the atmosphere. Biological monitoring of employees is also used, if appropriate. The results of these activities are reviewed in the course of plant operations but have not been compiled.
4. Ethyl Corporation has a Corporate Environmental Affairs Group whose purpose is to assure that all of our operations are in compliance with existing regulations and good practice. Ethyl Corporation employs a variety of controls to minimize the release of chemicals to the atmosphere. Because of the diversity of products, the type of control will vary as appropriate for the particular product or raw material. Control techniques utilized include low temperature condensation, absorbers, adsorbers, incinerators, filters, scrubbers, automatic foam systems, automatic sprinkler or deluge systems, and closed systems. Recycling is employed as a control technique where practicable.

I trust that this letter is a satisfactory response to your request for information. Please let us know if we can be of further assistance.

Sincerely,


Gary L. TerHaar
Corporate Director of
Toxicology and Industrial Hygiene


Donald E. Park
Corporate Director of
Environmental Affairs

GLT:DEP/jht

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bcc: Mr. D. C. Bach - Baton Rouge Tower
Mr. L. E. Blanchard - Richmond
✓Mr. E. W. Elmore - Richmond
Mr. N. E. Garland - Baton Rouge Plant
Mr. B. C. Gottwald - Richmond
Mr. F. D. Gottwald, Jr. - Richmond
Mr. A. W. Helwig - Richmond
Mr. D. E. Johnson - Ethyl Technical Center
Mr. R. A. Moser - Baton Rouge Plant
Mr. G. B. Meyers, M.D. - Baton Rouge Tower
Mr. A. P. Rowe - Richmond
Mr. J. G. Smith - Washington, D. C.

Suspected Hazardous Air Pollutants Under Assessment

LIST OF 37	Health assessment document started	1stSAB review	2ndSAB review	3rdSAB review	4thSAB review	SAB closure	Document finalized	Decision to list/ not list
Acetaldehyde ^a	(b)							
Acrolein ^a	(b)							
Acrylonitrile ^a	12/79	9/80	8/82	12/82	6/83 ^d	12/82 ^c		
Allyl chloride (for Carcinogenicity)								
Benzyl chloride ^a								
Beryllium (for carcinogenicity)	12/82							
Cadmium	12/77	8/78				9/78	10/81	
Carbon tetrachloride ^a	6/81	12/82	4/83			4/83 ^c		
Chlorobenzenes	(b)							
Chloroform ^a	2/82							
Chloroethene ^a	(b)							
Coke oven emissions	7/77	5/78	8/82	12/82	6/83 ^d	12/82 ^c		
O-,H-,P-Cresol ^a								
P-Dichlorobenzene ^a								
Dimethyl nitrosamine								
Dioxin	3/83							
Epichlorohydrin ^a	1/82							
Ethylene dichloride ^a	2/82							
Ethylene oxide ^a	2/82							
Formaldehyde ^a								
Hexachlorocyclopentadiene	2/83							
Maleic anhydride ^a								
Manganese	12/82							
Menthyl chloroform ^a	6/79	9/80	9/82	12/82	6/83 ^d	12/82 ^c		
Methylene chloride ^a	4/79	9/80	9/82					
Nickel	12/78							
Nitrobenzene ^a								
Nitrosomorpholine ^a								
Perchloroethylene ^a	8/78	9/80	9/82					
Phenol ^a	(e)							
Phosgene ^a								
PCB ^a								
Propylene oxide ^a	(b)							
Toluene ^a	8/80	9/80	8/82			9/82	5/83	
Trichloroethylene ^a	6/79	9/80						
Vinylidene chloride ^a	12/79							
O-,M-,P-,Xylene ^a								
OTHER CHEMICALS								
CFC-113	4/79	12/82	6/83 ^d			12/82 ^c		
Chromium	2/82							
Mineral fibers	11/82							
PCM	11/77	8/78						

^aIdentified by EPA in 1977 on its original list of 43 potentially hazardous air pollutants.

^bIn August 1982 OHEA initiated work on these chemicals through a task order to a level-of-effort contract with Mitre Corporation. The work cost \$76,121 and is a preliminary literature search and accumulation of references. OHEA will begin work on the health assessment documents in 1984.

^cOral conditional closure only; OAQPS will not take regulatory action until SAB written closure is obtained.

^dFinal revisions reviewed during June 1983 meeting.

^eSome health assessment work was conducted on Phenol in 1980 for the Love Canal project.

Source: EPA.